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MID-1972 AMENDMENTS TO THE SOCIAL SECURITY ACT

by C. L. Trowbridge

A few but very important changes in the Social Security System were enacted at mid-year in Public Law 92-336. (This Law was primarily directed to the extension of the national debt ceiling.)

The only change in the benefit structure with immediate impact is a general benefit increase of 20%, effective for the month of September 1972, payments of which are first made in early October. Eventually benefits will be further affected by two other important provisions: (1) the increase in the earnings base to $10,800 in 1973 and to $12,000 in 1974—as compared with $9,000 in effect in 1972, and (2) the so-called "automatic" provisions, under which (in the absence of legislative action) the benefit table is periodically increased in step with the Consumer Price Index, and the earnings base is concurrently increased in step with average earnings levels.

Of particular actuarial interest are the changes made in the financing of the system. The combined employer-employee contribution rate for old-age, survivors, disability, and hospital insurance combined was increased from 10.4% in 1972 to 11.0% for 1973 through 1985, with only slightly higher rates for the period 1986-2010. (The rate was scheduled to rise to 11.3% in 1973 and eventually to 12.1% with a $9,000 base, under the 1971 Amendments.) The new legislation calls for a substantially higher rate beginning in 2011, to reflect the demographic effect of the post-World War II baby boom reaching retirement age at about that time.

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COMMITTEES

Editor's Note: This is the third report on the operations of the Society's Committees. Mrs. Rappaport is Chairman of the Fields of Activity Committee.

by Anna Maria Rappaport

The Year Book defines the function of the Fields of Activity Committee as follows:

"This Committee advises and assists the Program Committee in the design, planning, and presentation of the programs at meetings of the Society. It also examines the adequacy and attractiveness of Society activities to the members and makes recommendations to the Board of Governors."

The major activity of the Fields of Activity Committee for the last few years has been planning for Society meetings. The Committee membership has been chosen to represent the various activities and interests within Society membership thus covering the interests of the entire membership.

Objectives of the Committee with Respect to Meetings

1. To evaluate meetings. Comments are collected from the Committee and represent their feelings, and the feelings of others whom they talk to. The Committee is sort of a "grass roots" data collection agency. Included in these evaluations are comments about the format of meetings, use of outside speakers, social activities, success of workshops, etc.
2. To provide a basic source of ideas for future meetings. The Committee is polled with respect to meeting format, social events and topics for workshops and concurrent sessions, and questioned about individuals who have been suggested as outside

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THE NATURAL RESERVE CONTROVERSY—A BRITISH VIEW

by Anthony P. Limb, F.I.A.

Editor's Note: We welcome this contribution from across the Atlantic. Mr. Limb is a Joint Secretary of the Scotish Life Assurance Company.

The author has recently returned from a visit to the United States and Canada during the course of which he had the privilege of meeting a number of actuaries practising in North America and discussing with them common problems and differences of approach. Apart from this experience he has however little knowledge of actuarial practices in North America, and while wishing to acknowledge with gratitude the assistance he received from these actuaries whom he met he readily acknowledges that there may be mis-understandings in his grasp of the situation. For that he alone is responsible.

The methods employed to evaluate the liabilities of a Life Office, and to present the results for public scrutiny, are of prime interest to actuaries and have always been a fertile source of discussion and disagreement. They are also the field in which there is the greatest need for the actuary to display skill, judgment, and responsibility. In Britain at the present time the subject of valuation presentation and approach is, and has for some time been, of concern for at least two reasons. In the first place, a policy of investment in equities and property, which may be pursued in Britain without regulatory interference and has been adopted by a number of Life Offices to the extent of between say 40 and 60% of their assets, has produced large capital appreciation, both realized and unrealized. This capital appreciation

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Natural Reserve

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forms a significant part of the total investment return obtained from investment in equities and property and, if equity is to be preserved, an appropriate part of these sums should go to existing policyholders (whose funds were used in making the investments) and the rest used as an investment in new business and to hedge against future capital losses by the setting up of appropriate investment reserves. However, using a modified or unmodified net premium valuation it is possible to use capital appreciation only by a specific decision to treat part of the sums involved as income, by means of a specific transfer to the revenue account—such transfers are permitted in Britain—and, in view of the volatility of common stock prices, it is not easy to be confident how much of the appreciation can thus be used at any given time. Secondly, conservatism in making these transfers has indirectly exerted a restraining influence on the amount of new business written, since substantial new business strains are incurred under the conventional valuation presentation, which employs a rate of interest substantially below that assumed in calculating the premiums. Thus questions of equity and of expansion have combined, together with the investment policy followed, to cause some offices to depart from the traditional net premium valuation presentation.

In Britain there is a much greater degree of freedom of manoeuvre open to the actuary. There is no statutory maximum valuation rate which may be employed, and, for ordinary business, no prescribed tables of mortality or other constraints operate. In North America, where there is a well-developed regulatory framework within which the actuary must operate, the question of appropriate valuation bases and the presentation of results has arisen in recent years, the author understands, for other reasons.

The movement towards presenting the valuation results on a natural reserve basis can be traced to the interests of shareholders in stock companies. If a proprietary company expands rapidly, using premium rates which may well eventually produce a substantial profit for the office, the strait jacket of the statutory valuation basis — or of the office's customary valuation basis, which may be even stronger—produces a reduced, if not a negative net gain from operations. A sequence of such results combines to depress the stock price. The proponents of the natural reserve presentation school, argue that it is appropriate to value new business — and existing business—on a basis closely approximating to the premium basis on which the business was issued. This, they say, will properly reflect the emergence of profit or loss. It will also mean of course that if a large body of new business is written in any particular year, earnings as presented on this natural reserve basis will not be significantly different from those which would emerge had no new business been written in the year. It is assumed, naturally, that the statutory reserve basis will continue to be mandatory as an alternative presentation, so that, although the net gains from operations when presented on that basis would doubtless look uninspiring to the shareholder, he would be able to examine the natural reserve basis presentation and see a truer picture of the financial position of the office. The maintenance of the statutory reserve basis will, provided a suitable surplus is maintained, ensure that the office is properly solvent.

In essence the problems facing British and North American actuaries in this matter seem to be similar. The question is whether or not the reserve basis is adequate to enable the Office to fulfill its promises to pay under all save the most extreme circumstances, with the added proviso that, under normal circumstances, the presentation should not be such as will conceal a deterioration in the insurer's position which would eventually require violent remedial action. The author would like to question the significance of the surplus percentages revealed by North American offices. It is the case that the nominal value of the assets is in excess of the reserves required, and that the reserves required are adequate to meet the liabilities provided that the valuation rate of interest is obtained on the reserves and subsequent premiums received, and that experience is in all respects as postulated by the valuation basis. It is also the case, the author understands, that reserves are adequate to cover cash values. However, since the nominal value of the assets is in general in excess of the market value of the assets, which is what would be required if mass surrender were to occur, and since there is no formal test of the appropriateness of the asset distribution by date as compared with the liability distribution by date, and since, as far as the author is aware, little work has been done to determine what margins should be held to cope with statistical fluctuations about expected experience, the significance of any particular level of surplus is somewhat in doubt. The position in Britain is in some respects similar, but there is a legal requirement not to value assets at a figure in excess of the market value thereof. The author's point is that if the significance of existing surplus is in some doubt, any method of presentation which permits over rapid new business expansion may lead more quickly to the point where surplus is in fact inadequate.

It would appear to the author that there is a risk that the following sequence of events, perhaps spread over many years, may occur. In the first place, the natural reserve basis will be adopted for proprietary companies and presented in parallel with the statutory reserve basis. This will probably permit and encourage more rapid new business expansion than might otherwise be the case. The author does not mean to suggest, of course, that new business expansion should be suppressed unduly, he is merely concerned to point out that new business expansion does not generate immediate accretions to surplus, and surplus must be kept at an adequate level. Second, the policyholders of mutual companies will demand that they also present their results on a modified basis in addition to the statutory basis. This will lead to assertions that mutual companies have huge and unnecessary reserves and should increase their dividend scales promptly and significantly. It may also lead, of course, to taxation on the alleged surpluses thus revealed. Thirdly, a school of thought will emerge which will assert that, since we have for many years been obtaining rates of interest on new investments substantially above the maximum statutory permitted rate, and since companies both stock and mutual have for some time been presenting results on the natural reserve basis in addition to the statutory basis, and are selling new business on the natural reserve basis which they must therefore believe to be profitable in the long run, therefore, the statutory reserve basis should be abandoned as being quite absurdly strong and a ridiculous brake on new business expansion and dividends both to shareholders and policyholders.

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Natural Reserve

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Now the customary valuation bases either are too strong, or they are not. If we assume for the moment that they are not, then no matter what other presentation is adopted for the revenue account, additional reserves, no doubt capital reserves, must by hypothesis be set up and added to the reserves shown in the revenue account under a weaker basis so as to produce a reserve which in total is equivalent to the reserve presently set up. If additional reserves of a capital nature are set up in this way, then neither new business expansion nor dividends to shareholders or policyholders can move ahead any more rapidly than they can under a conventional presentation system, properly managed. If on the other hand, the statutory reserve basis is too strong then of course it should be weakened and some other reserve basis put in its place. This is the situation which would emerge if the sequence of events outlined in the preceding paragraph were to materialize.

The question which has to be answered therefore is simply this: are conventional valuation presentations too strong or are they not? As soon as the question is posed we must admit that we do not know the answer. We do not even know if the conventional reserve basis is strong enough, though there would I submit be almost universal agreement that it is for most contracts. If therefore we weaken our valuation bases we are moving from a framework which we are fairly confident gives us a satisfactory probability of being able to redeem our promises to pay, to a framework under which that probability is weakened to an extent which cannot be quantified. A move to the natural reserve basis in essence implies that we substitute in our valuation basis a rate of interest which is our best estimate of future experience for one which, we are fairly sure, is an underestimate of future experience, but not, for all that, inappropriately strong.

If such a change is made, there would undoubtedly be a short term gain to shareholders. For this purpose however, the weakening of the life fund seems too high a price to pay. The author realizes of course, that a change on the part of stock companies to the presentation of valuation results on a natural reserve

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Society Examinations-Seminars

GEORGIA STATE UNIVERSITY

Seminars for Parts 5 and 7 will be held during the week of October 16-20.

Complete information can be obtained from

GEORGIA STATE UNIVERSITY
Insurance Department
33 Gilmer Street, S.E.
Atlanta, Georgia 30303
Telephone (404) 658-2725

NORTHEASTERN UNIVERSITY

A four-week seminar for Part 7 begins October 16 and ends November 9.

Five-week seminars for Parts 9E and 9I begin October 2 and end November 3.

Complete information can be obtained from

DEAN GEOFFREY CROFTS
Graduate School of Actuarial Science
Northeastern University
360 Huntington Avenue
Boston, Massachusetts 02115
Telephone (617) 437-2696

Actuarial Clubs

The Actuary is unable to publish announcements of the newly elected officers in the various clubs. Such information should be sent to the Chicago office for publication in the *Year Book.*

The Actuary is glad to publish announcements of the meetings of the clubs. Secretaries should note that notices of meetings should be in the hands of the Editor at least two months prior to the date of the meeting. *The Actuary* would like to have reports of topical discussions at club meetings. Several of these have been worthwhile contributions to the Newsletter.

Actuarial Meetings

Sept. 13, Baltimore Actuaries Club

Sept. 21, Hartford Actuaries Club

Oct. 12, Baltimore Actuaries Club

Oct. 23, American Academy of Actuaries, Annual Meeting, Bal Harbour, Florida

POPULATION DYNAMICS SYMPOSIUM

by John A. Beekman

There is a growing trend to partially describe population dynamics through new mathematical models using probability, statistics, differential equations, and other branches of mathematics. In June this year, the Mathematics Research Center of the University of Wisconsin sponsored a symposium on Population Dynamics devoted to such models. The symposium provided an opportunity for exchange of ideas among demographers, mathematicians, actuaries and sociologists. It was organized by a committee consisting of T.N.E. Greville (Chairman), Nathan Keyfitz, Louis B. Rall, Karl E. Taeuber, and Halliman Winsborough. All of the committee members are professors at the University of Wisconsin, except Mr. Keyfitz who is a professor at Harvard University.

Some of the lectures could be of real interest to actuaries and so this note will give a thumbnail sketch of several of the talks. Professor Keyfitz presented a paper on "Oscillations in a Demographic-Economic Model." One of his applications showed how better mathematical models could provide school administrators with superior facilities for future planning.

Jan Hoem, Director of the Central Bureau of Statistics of Norway, discussed stochastic process models for marriage dissolution, number of children, and human reproduction. Professor Paul Handler, University of Illinois, presented a synopsis of a way that the computer can be used to dramatically change teaching methods in demography. A student can select any country and in seconds obtain the age distribution of that country, and its population projections under existing conditions or with changed fertility rates, and mortality rates. The projected age distributions can be used to study: (1) cost of education; (2) demand for food; (3) labor force; (4) cost of social services.

The 14 papers will be published as a book by Academic Press and will appear towards the end of the year. □

Book Review

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This question was the subject of a panel discussion at a recent meeting of the Society of Actuaries. Some actuaries have opted for greater disclosure in actuarial reports, not only as a substitute for "guidelines" but also as a road to better understanding of pensions on the part of the public, perhaps minimizing the need for restrictive regulation. This reviewer infers support by the author of this book for the principle of more adequate disclosure in valuation reports and possibly in pension funding matters generally. The author's position relative to the education of plan sponsors on matters of gain and loss suggests such a stance. Mr. Berin certainly is aware of objections to expanded reports which critics have raised. He cites the usual arguments—"not understood by, or of too little interest to, employers," "too time consuming and expensive," and so on. He dismisses these arguments in the case of the gain and loss analysis.

If it is practicable and constructive to communicate a gain and loss analysis, one might ask whether it is not also practicable to disclose other, conceptually simpler, items in order to contribute to better public understanding. Computerized valuations have introduced a brand new ball game in the informational field. Expanding reported details would be time consuming to a degree. Yet, if limited to items which the actuary knows to be available and *meaningful*, it could be less time consuming to program a computer to provide the information than to compile reams of virtually meaningless reports designed by well intentioned public servants—which seems to be the direction in which we are heading. As for making things understandable (even interesting!) to clients, the challenge this presents is hardly new. Mr. Berin points out most consultants *are* consultants because of that challenge.

A clarification might be in order on page 87 of the book, where the author advises against double-valuations "as a regular procedure" (i.e., valuations based on the plan's regular assumptions and funding method, as well as on alternate assumptions and method). We suspect he had in mind discouraging somewhat arbitrary changes in valuation bases on the part of employers who want "the best of all possible worlds" from year to year if shown too many alternatives.

We are confident he did not intend a proscription against providing plan sponsors with meaningful information relative to such matters as "benefit security of plan participants by class," "status of funding *vis-a-vis* 'close out' rates available from insurance companies," "tests of fund yields needed to overcome inflationary pay increases," and a variety of information which may be found useful in particular situations.

The author might someday wish to consider expanding The Fundamentals of Pension Mathematics to a more comprehensive, self-sufficient text, a "bible" of actuarial techniques and procedures for pension plan valuations.

Berin's book is timely, and one can feel greater confidence in the pension actuary of tomorrow if he has been brought up on such a training diet.

Setting aside minor flaws which could be corrected by simple editorial changes, Mr. Berin's book renders a substantial service to actuaries—hopefully to those of long standing as well as to the students who will be representing our profession in the future. □

Committees

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speakers, etc. The Committee welcomes suggestions and comments from all Society members.

3. To provide a source for suggested workshop leaders and panelists. The list polled for workshop leaders and panelists also includes individuals who are not on the Committee. In addition to the Fields of Activity Committee members, a number of other Society members are asked to suggest program participants.
4. To assist the Program Committee in planning the meeting, and in recruiting the panelists and workshop leaders.

How the Committee Functions

The Committee is polled by mail both for meeting evaluations and for suggestions about future meetings. (Suggestions are also welcomed on any topic and need not relate to meetings).

A designated Committee member collects all suggestions and collates them. The Chairman and Co-Chairman of the Committee, and usually three other Committee members, become part of th working group of the Program Committee for a given Society meeting, and work together with the Society Vice Presidents responsible for the meeting.

How a Society Meeting is Planned

The Fields of Activity Committee collects evaluations of past meetings, together with suggestions for the current meeting and submits these to the Working Group of the Program Committee for the particular meeting. The Working Group is composed of two Society Vice Presidents, the Executive Director of the Society, the Fields of Activity Committee representatives, and a local arrangements representative. On the basis of the ideas submitted, the Program Committee prepares the program. The program is balanced to include topics of interest to various segments of the membership. "Hot" current topics are included and topics which were very popular at recent meetings may be repeated.

The program outline is then mailed to the Fields of Activity Committee and to a number of other Society members for suggestions as to participants. A list c suggested persons is compiled and the Working Group meets to select panelists and workshop leaders from this list. The Fields of Activity Committee is responsible for getting in touch with the moderators and workshop chairmen who in turn get in touch with the panelists and the co-chairmen. The moderators and the chairmen develop the final program content and the finished program is sent to the Society's office for distribution.

The Committee welcomes comments on past meetings and suggestions for future programs. These should be sent to Mrs. Rappaport or to the Vice-Chairman, Richard S. Robertson. □

Natural Reserve

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basis, whilst at the same time retaining the traditional presentation on the bases within the statutory limits need not necessarily lead to the extreme situation described in this article. He has been concerned only to point out the danger which seem to him to exist should any significant weakening of valuation bases take place, and to contrast these with the slender and possibly transient advantages of such a course. □